

**WHAT IS CLAIMED IS:**

1. An anti-phosphatidyl serine antibody or fragment thereof that binds the phospholipid phosphatidyl serine.
2. The anti-phosphatidyl serine antibody of claim 1, wherein said anti-phosphatidyl serine antibody is a monoclonal antibody.
3. The anti-phosphatidyl serine antibody of claim 2, wherein said monoclonal antibody binds the same epitope as 2E7 or competes with 2E7 for binding the phospholipid phosphatidyl serine.
4. The anti-phosphatidyl serine antibody of claim 2, wherein said monoclonal antibody is a chimeric, human or humanized antibody.
5. A composition for treating tumors, neoplasms or cancers comprising an anti-phosphatidyl serine antibody of claim 1 and a pharmaceutically acceptable carrier.
6. The composition of claim 5, wherein said antibody is a monoclonal antibody.
7. The composition of claim 6, wherein said monoclonal antibody binds

the same epitope as 2E7 or competes with 2E7 for binding the phospholipid phosphatidyl serine.

8. The composition of claim 6, wherein said monoclonal antibody is a chimeric, human or humanized antibody.
9. A method of treating a neoplastic disorder comprising administering a therapeutically effective amount of an anti-phosphatidyl serine antibody or a fragment thereof to a mammal in need thereof.
10. The method of claim 9, wherein said anti-phosphatidyl serine antibody is a monoclonal antibody.
11. The anti-phosphatidyl serine antibody of claim 10, wherein said monoclonal antibody is a chimeric, human or humanized antibody.
12. The method of claim 10, wherein said anti-phosphatidyl serine antibody binds the same epitope as 2E7 or competes with 2E7 for binding the phospholipid phosphatidyl serine.
13. The method of claim 9, wherein said anti-phosphatidyl serine antibody is conjugated to a toxin, a drug or a radionuclide.

14. The method of claim 13, wherein said toxin is ricin A chain or *Pseudomonas* toxin.
15. The method of claim 13, wherein said anti-phosphatidyl serine antibody is conjugated with a chemotherapeutic drug.
16. The method of claim 13, wherein said anti-phosphatidyl serine antibody is conjugated with a radionuclide.
17. A method for inhibiting angiogenesis comprising administering a therapeutically effective amount of an anti-phosphatidyl serine antibody or a fragment thereof to a mammal in need thereof.
18. The method of claim 17, wherein said anti-phosphatidyl serine antibody is a monoclonal antibody.
19. The method of claim 18, wherein said monoclonal antibody is a chimeric, human or humanized antibody.
20. The method of claim 17, wherein said anti-phosphatidyl serine antibody binds the same epitope as 2E7 or competes with 2E7 for

binding the phospholipid phosphatidyl serine.

21. The method of claim 17, wherein said anti-phosphatidyl serine antibody is conjugated to a toxin, a drug or a radionuclide.
22. The method of claim 21, wherein said toxin is selected from the group consisting of ricin A chain and *Pseudomonas* toxin.
23. The method of claim 21, wherein said anti-phosphatidyl serine antibody is conjugated with a chemotherapeutic drug.
24. The method of claim 21, wherein said anti-phosphatidyl serine antibody is conjugated with a radionuclide.
25. A method of detecting PS positive tumors or cancers comprising:
  - (i) incubating a sample with an antibody directed against phosphatidyl serine under conditions which allow the formation of an antigen-antibody complex; and
  - (ii) detecting said antigen-antibody complex.
26. The method of claim 25, wherein said sample is selected from the group consisting of blood, bone marrow and combination thereof.

27. A kit for analyzing a sample for the presence of PS positive cells comprising an antibody directed against phosphatidyl serine and ancillary reagents for use in detecting the presence of phosphatidyl serine.

28. The kit according to claim 27, wherein said kit further comprises:

- (i) a solid support on which to bind a primary anti-PS antibody;
- (ii) a solution containing the primary antibody;
- (iii) at least one buffer solution to block unbound sites on the solid support and to wash the solid support;
- (iv) a solution containing the labeled secondary antibody; and
- (v) Positive and negative PS control cells.